Supplementary Materials for

**Hugoniot measurements of calcite from 200 to 1000 GPa: implications for the planetary atmosphere chemistry by the shock-induced degassing**

Yuhei Umeda1, 2, Keiya Fukui1, Toshimori Sekine1, 3, M. Guarguaglini4, A. Benuzzi-Mounaix4, Nobuki Kamimura1, Kento Katagiri1, Ryosuke Kodama1, 2, Takeshi Matsuoka1, Kohei Miyanishi4 A. Ravasio4, Takayoshi Sano2, and Norimasa Ozaki1,2

1Graduate School of Engineering, Osaka University, Osaka, Japan

2Institute of Laser Engineering, Osaka University, Osaka, Japan

3Center for High Pressure Science & Technology Advanced Research, Shanghai, China

4Ecole Polytechnique, Paris, France

5Riken, Spring-8, SACLA, Japan

Corresponding author: [yuhei-umeda@eie.eng.osaka-u.ac.jp](mailto:yuhei-umeda@eie.eng.osaka-u.ac.jp)

**Figure S1. Hugoniot relation of calcite.**

The *P-up* (*a*) and *Us-up* (*b*) determined in this study as light blue diamonds and compared with the SESAME model as orange solid line. The error bars in this study are the same as the symbol size.****





**Table S1. The experimental conditions and shock Hugoniot data for Calcite (CaCO3) and quartz (Qz).**

****